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EXAMINER

MAYO III, WILLIAM H

ART UNIT

PAPER NUMBER

2831

DATE MAILED: 02/11/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/673,143

Applicant(s)

PRIGENT ET AL.

Examiner

William H. Mayo III

Art Unit

2831

-- The MAILING DATE of this communication appears on the cover sheet with the corresponding address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 January 2002.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-9 and 11 is/are rejected.
- 7) ☒ Claim(s) 10 and 12 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Specification

1. The abstract of the disclosure is objected to because it contains the term "comprising" in line 3, which is improper language for the abstract. The applicant should replace the term with —having—.

Correction is required. See MPEP § 608.01(b).

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-2, 5, 8, and 11 are rejected under 35 U.S.C. 102(b) as being anticipated by Castelli et al (Pat Num 4,342,880, herein referred to as Castelli). Castelli discloses power cable (Fig 1) comprising one or more cores being at least in a common protective coating (Col 1, lines 5-8). Specifically, with respect to claim 1, Castelli discloses a cable (10) comprising a conductive material core (11) and at least one covering layer (12, 13, and 14) wherein the layer (12, 13, & 14) comprises an inorganic compound (i.e. carbon black) of sheet structure (in layers 12 & 14), wherein the sheet structure is capable of being exfoliated layer structure (Col 1, lines 9-15) and an organic compound (XLPE) inserted between the layers (12 & 14) of inorganic compound. With respect to claim 2, Castelli discloses an inorganic compound (i.e. carbon black) is an inorganic oxide. With

respect to claim 5, Castelli discloses an organic compound (i.e. XLPE), which is a polymer. With respect to claim 8, Castelli discloses an insulative layer (12, 13, and 14) comprising an inorganic compound (i.e. carbon black) of sheet structure (in layers 12 & 14), wherein the sheet structure is capable of being exfoliated layer structure (Col 1, lines 9-15) and an organic compound (XLPE) inserted between the layers (12 & 14) of inorganic compound. With respect to claim 11, Castelli discloses a method of fabricating a power cable (10) including the steps of treating the inorganic compound (i.e. carbon black) with an agent (i.e. peroxide, Col 2, lines 29-32) to combine it with organic compound (i.e. polymer by mixing the treated inorganic compound (i.e. carbon black) with the organic compound (i.e. XLPE) at a temperature higher than the temperature at which the organic compound (i.e. XLPE) soften or melts (i.e. extrusion process, Col 2, lines 47-52) and obtaining a layer (12, 13, & 14) with an organic compound (i.e. XLPE) between the inorganic layers (i.e. carbon black in 12 & 14).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein

were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

6. Claims 3-4, 6-7, and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Castelli (Pat Num 4,342,880). Castelli disclose power cable (Fig 1) comprising one or more core being at least in a common protective coating (Col 1, lines 5-8) as detailed above in claim 1.

However, Castelli doesn't necessarily disclose the inorganic oxide being clay chosen from kaolin, smectite, montmorillonite, bentonite, beidellite, notronite, saponite, hectorite, vermiculite, wollastonite, or a mixture thereof (claim 3), nor the clay being selected from montmorillonite or bentonite (claim 4), nor the polymer being selected from a group of polyolefin, polybutylene terphthalate, vinyl polymer, an elastomer, polyamidimide, polyurethane, silicone, or mixture thereof (claim 6), nor the polymer being chosen from epoxy resin, polyester, polyamide, polyimide, polyetherimide, polyamide, polyurethane, silicone, or a mixture thereof (claim 7), nor the covering layer comprising an external covering comprising an inorganic compound having an exfoliated layered structure and an organic compound inserted between the layers of inorganic compound (claim 9).

With respect to claims 3-4, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the inorganic compound of

Castelli to be made of clay such as bentonite, since it is well known in the art of cables that filler materials (i.e. clay), such as bentonite, are commonly utilized in polymer materials of cables because of its density to provide thicker insulations and its ability to swell when impregnated by water thereby providing a waterproofing mechanism for cables and since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. In re Leshin, 125 USPQ 416.

With respect to claims 6-7, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the polymer of Castelli to be made of a polyurethane material, since it is well known in the art of cables that polymer materials, such as polyurethane, are commonly utilized as cable insulations because of its excellent chemical, water, and abrasion resistance thereby protecting cables from external forces and elements and since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. In re Leshin, 125 USPQ 416.

With respect to claim 9, it would have been obvious to one having ordinary skill in the art, at the time the invention was made to modify the cable of Castelli to comprise an additional covering layer comprising an external covering comprising an inorganic compound having an exfoliated layered structure and an organic compound inserted between the layers of inorganic compound, since it has been held that mere duplication of the essential working parts of a device involves only routine skill in the art. (*St. Regis Paper Co v. Bemis Co.*, 193 USPQ 8).

Allowable Subject Matter

7. Claim 12 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.
8. Claim 10 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.
9. The following is a statement of reasons for the indication of allowable subject matter: This invention also deals with a method of fabricating a power cable wherein the compatible agent is chosen from quaternary ammonium salt and an oxide of polyethylene and a phosphorus-containing derivative (claim 12). These limitations along with other claim limitations are not taught or suggested by prior art of record.

Response to Arguments

10. Applicant's arguments filed January 7, 2002 have been fully considered but they are not persuasive. The applicant argues the following:
 - A) Castelli fails to teach a nanocomposite component as detailed in the specification on page 1, line 30.
 - B) Castelli doesn't disclose an inorganic compound having an exfoliated layered structure as recited in claim 1.

- C) Castelli discloses that the outer semi-conductive screen is a blend of nitrile rubber and ethylene-propylene rubber and thus doesn't disclose the outer semi-conductive screen having an inorganic compound.
- D) Castelli doesn't disclose the inorganic compound being incompatible with the organic compound via treatment with an agent as specified in claim 11.
- E) Castelli doesn't disclose the cable comprising an outer covering layer comprising a material having an inorganic compound having an exfoliated layered structure and an organic compound inserted between the layers of inorganic compound.

With respect to argument A, the examiner respectfully traverses. It is noted that the feature upon which applicant relies (i.e., a nanocomposite component) is not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Genus*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

With respect to argument B, the examiner respectfully traverses. The applicant has tried to specify that the at least one covering layers have exfoliated layered structure. Exfoliated is a process (i.e. method of forming) utilized in the cable art to separate cable layers. It has been held that the method of forming a device is not germane to the issue of patentability of the device itself. 145 USPQ 656 (CCPA 1965)

Specifically speaking, if the device itself is capable of be formed by the method of making, then the method is not germane to the issue of patentability. Clearly, Castelli discloses that the at least one covering layer, is capable of being separated.

Specifically, Castelli states in Col 1, lines 11-15,

“...said core being improved so that said outer semi conductive screen is adherent to said insulation, but also is easily removable (or, as said in the art, “strippable”) from the insulation itself.”

Therefore, Castelli does disclose at least one covering layer (i.e. inner and outer semi conductive layers, 12 & 14) comprising an inorganic material (i.e. carbon black) and organic compound (13) inserted between, wherein the layers may be separated (i.e. exfoliated). In light of the above statements, the examiner submits that the rejection under 35 USC 102(b) is proper.

With respect to argument C, the examiner respectfully traverses. It is unclear how the applicant can state that the outer semi-conductive layer doesn't contain an inorganic compound. Clearly, Castelli discloses that the outer semi-conductive layer comprises an inorganic compound (i.e. carbon black). Specifically, Castelli discloses in Column 3, lines 35-40

*“The outer semi conductive screen 14 is according to the present invention, constituted by a mixture based on a blend of nitrile rubber and ethylene propylene rubber, **said mixture comprising semi conductive carbon black...**”*

Therefore, Castelli clearly does disclose at least one covering layer (i.e. inner and outer semi conductive layers, 12 & 14) comprising an inorganic material (i.e. carbon black).

In light of the above statements, the examiner submits that the rejections under 35 USC 102 (b) and 35 USC 103 are proper.

With respect to argument D, the examiner respectfully traverses. It is noted that the feature upon which applicant relies (i.e. the inorganic compound being incompatible with the organic compound via treatment with an agent) is not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Genus*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). It appears that the claim recites the complete opposite of what the applicant is arguing. Specifically, claim 11 recites,

*"treating said inorganic compound with an agent to render it
compatible with said organic compound"*

With respect to claim E, the examiner respectfully traverses. While the examiner has clearly stated that Castelli doesn't disclose the cable comprising an outer covering layer comprising a material having an inorganic compound having an exfoliated layered structure and an organic compound inserted between the layers of inorganic compound, (see 35 USC 103 rejection), it would have been obvious to modify Castelli to have an outer layer comprising the above components. Specifically, Castelli states in Column 3, lines 24-29,

*"The single Figure of the drawing illustrate a single core cable, i.e. comprising only a single core. **However, as already said, the present invention is suitably applied also to a multi-core cable, which comprises a plurality of cores laid up in a common protective covering.**"*

Castelli, while not illustrating multiple layers, clearly implies that the cable may have multiple layers. Therefore, it would have been obvious to modify the outer covering layer since it has been held that mere duplication of the essential working parts of a device involves only routine skill in the art. (*St. Regis Paper Co v. Bemis Co.*, 193

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USPQ 8) and based on the teaching of Castelli, clearly the cable would perform equally well with or without such a modification.

Conclusion

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. They are Anderson et al (Pat Num 4,132,858), Schneider (GB 2,043,327 A) and Hasebe et al (Pat Num 3,663,742), all of which disclose power cables, Henkel et al (Pat Num 4,795,769), Reid et al (Pat Num 6,086,792), Fujikura Cable Works (JP Pat Num 63-274018), Fujikura Cable Works (JP Pat Num 53-93390) and Fujikura Cable Works (JP Pat Num 2001-67934), all of which disclose exfoliated inorganic layers used for insulating layers of power cables.

12. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

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the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.


Communication

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to William H. Mayo III whose telephone number is (703) 306-9061. The examiner can normally be reached on M-F 8:30 a. m.-6:00 p.m.(alternating Friday's off).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dean Reichard can be reached on (703) 308-3682. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 305-3432 for regular communications and (703) 305-1341 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

WHM III
February 2, 2002

 2/5/02
DEAN A. REICHARD
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800